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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/817,398

04/01/2004

Mikhail Korolik

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EXAMINER

HECKERT, JASON MARK

ART UNIT

PAPER NUMBER

1792

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/817,398	<b>Applicant(s)</b> KOROLIK ET AL.	
	<b>Examiner</b> JASON HECKERT	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13, 15-26, 33 and 35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13, 15-26, 33 and 35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/23/08 has been entered.

### ***Response to Arguments***

2. Due to the applicant's amendments to the claims, the previous rejections in view of Bok have been rendered moot.

3. However, a new rejection is presented in view of newly discovered prior art. Mertens shows a nozzle head with a plurality of conduits for delivering fluid, and a plurality of conduits for removing fluid. Note, only claims 33 and 35 of the instant application actually claim a "plurality for delivering" and a "plurality for removing". It is considered to be obvious that such a head would be used in a controlled chamber, as is common in the substrate processing art. Mertens discloses that his nozzle head is capable of being used to treat top surfaces of a substrate as well as bottom surfaces of a substrate. Examiner believes it is within the skill of one practicing the art to duplicate the head of Mertens and treat both surfaces simultaneously.

4. Mertens is silent to the introduction of an environment control gas. It is well known in the art to bubble IPA vapor into a process chamber to create a vapor atmosphere. Schild discloses such a device.

***Claim Objections***

5. Claim 13 objected to because of the following informalities: "that is communication" should read --that is in communication--. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 13, 17-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Mertens et al. Mertens discloses a substrate treatment apparatus for delivering and removing fluids in close proximity to a substrate. The head unit comprises a plurality of conduits for delivering and removing fluid (channels 50 and 51). A chamber housing such head is considered to be obvious, if not inherent, as it is very common to operate substrate treatment devices in sealed or controlled environments, whether it be a clean room or containment device. Channel 53 injects a control gas to alter the environment in and around channels 50 and 51. The leading edge of the apparatus encounters the unprocessed regions before the internal channels 50 and 51. The device of Mertens is capable of providing various environmental control gases, and little patentable weight is

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given to claims 21-26. Mertens discloses that the apparatus can be used to treat both the top and bottom surface of a substrate. Mertens even shows another embodiment where two heads are used (figure 1b) to treat both surfaces simultaneously. Examiner believes that one skilled in the art is capable of duplicating the device of figure 5b and treating top and bottoms surfaces of a substrate simultaneously, as Mertens shows in figure 1b, especially considering the device of 5b is capable of treating both a top and bottom surface. Furthermore, duplication of parts was held to have been obvious. *St. Regis Paper Co. v. Beemis Co. Inc.* 193 USPQ 8, 11 (1977); *In re Harza* 124 USPQ 378 (CCPA 1960).

8. Claims 15, 16, 33, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mertens in view of Schild et al. and further in view of Bok or Morinishi et al. As opposed to viewing channels 52 and 54 as the environmental control gas input, it can also be construed as an addition channel for delivering fluid, and an additional channel for removing fluid. Thus, Mertens discloses a head with a plurality of conduits for delivering fluid (channels 50 and 52) and a plurality of conduits for removing fluid (channels 51 and 54). Bubbling IPA vapor into a substrate treatment apparatus is known in the art in order to provide a vapor rich atmosphere. Schild discloses injecting IPA vapor via a bubbler in order to create a homogenous vapor atmosphere so that conditions for each wafer are identical (col 5 lines 60 - col 6 line 3). As stated previously, examiner believes that one skilled in the art is capable of duplicating the device of Mertens and treating top and bottoms surfaces of a substrate simultaneously. An arm or support mechanism is considered to be obvious if not inherent. Process

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control is common in most substrate treatment mechanisms. In a previous rejection, Bok was disclosed as obviating process control devices (col. 6 lines 33-39). Sensors and control input are considered to be common process control devices. Furthermore, Bok's device includes a console that controls a variety of parameters, such as temperature and liquid circulation. Additionally, Morinishi discloses a flow control unit 21 comprising various sensors for detecting fluid flow and controlling fluid flow in a treatment apparatus. Thus, the inclusion of fluid sensors and fluid control are considered to be obvious modifications that are not patentably distinct features. It would have been obvious at the time of the invention to modify Mertens and include two nozzle heads for treating both surfaces of a substrate and additionally provide a vapor atmosphere, as disclosed by Schild, for identical wafer treatment.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON HECKERT whose telephone number is (571)272-2702. The examiner can normally be reached on Mon. to Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/  
Supervisory Patent Examiner, Art Unit 1792

JMH